

5.14 WORKER SAFETY

This section describes the systems and procedures that will be implemented to provide occupational safety and health protection for Palomar project workers. The California Occupational Health and Safety Act of 1973 established the California Occupational Safety and Health Administration (Cal-OSHA) as the state agency responsible for oversight of workplace safety. The following pages address the applicable health and safety elements of Title 8 California Code of Regulations (CCR), General Industry Safety Orders, Construction Safety Orders, and Electrical Safety Orders.

5.14.1 Affected Environment

Because the Palomar facilities do not yet exist, there are no relevant baseline conditions or “affected environment”, as there are other environmental resource areas, such as air quality, biological resources, etc. The context for an assessment of project worker safety issues is the requirement for employers in California to provide and maintain a safe and healthy workplace, and the nature of the project at which workers would be employed.

The Palomar project includes the construction and operation of a natural gas-fired combined-cycle power plant and associated linear facilities. These include new water supply and wastewater return pipelines and an upgraded segment of natural gas supply pipeline. Project facilities and processes are described in Section 2.0, as are other relevant aspects of the project, such as fire protection systems, and expected hazardous materials use and storage.

The Palomar project will be fueled with natural gas through a connection with an existing 16-inch SDG&E gas pipeline located in Enterprise Street, immediately adjacent to the northeast corner of the project site. In order to relieve a bottleneck in a segment of the existing SDG&E gas system, SDG&E will construct an upgrade consisting of approximately 2,600 feet of 16-inch gas pipeline.

A new metering station will be installed at the gas line’s tie-in point to the plant. The expected minimum pressure of natural gas delivered to the site is 350 pounds per square inch, gauge (psig). When the SDG&E delivery pressure drops to less than 350 psig, two electric motor-driven gas compressors at the plant will operate to maintain an outlet pressure of 500 to 550 psig. An isolation valve will be installed between the plant and the tie-in point to the existing gas line in Enterprise Street.

The gas line will be buried with a minimum 36-inch cover. The pipe will be coated with suitable material and cathodically protected against corrosion. The pipeline will be designed to UBC Seismic Zone 4 design criteria, and in accordance with SDG&E design and construction criteria.

5.14.2 Environmental Impacts

5.14.2.1 Workplace Hazards

Palomar project worker safety impacts are defined as the workplace hazards that could adversely affect project personnel, contractors, or vendors during the project’s construction and operational

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phases. Table 5.14-1 provides a hazard analysis that identifies the anticipated and potential hazards that may be encountered during Palomar project construction and operations.

5.14.3 Mitigation Measures

5.14.3.1 Health and Safety Programs (Construction and Operations)

Health and safety programs will be implemented to protect the safety and health of project workers during both construction and operations. These health and safety programs will be designed to mitigate hazards and comply with applicable regulations. Safety programs will be initiated during the project construction phase. Upon completion of construction and as power plant operations get underway, the construction safety and health program will transition into an operations-oriented program to address the hazards and controls necessary during routine operations.

Table 5.14-1 Construction, Operation, and Maintenance Hazards Analysis¹

Activity	Exposure Potential	Hazard ¹	Control
Heavy Equipment Use	C, O, M	Employee injury and property damage from collisions between people and equipment.	Heavy Equipment Safety Program
Forklift Operation	C, O, M	Same as heavy equipment.	Forklift Operator Certification
Trenching and Excavation	C, O, M	Employee injury and property damage from the collapse of trenches and excavations.	Trenching and Excavation Safety Program Excavation Permits and Confined Space Entry per Cal-OSHA
Working at Elevated Locations	C, O, M	Falls from same level and elevated areas.	100% Fall Protection Program Scaffolding Safety Program
Use of Cranes or Derricks	C, O, M	Property damage from falling loads. Employee injuries from falling loads. Injuries and property damage from contact with cranes or derricks.	Use of crane permits as required per Cal-OSHA Hoisting and Rigging Safety Program Crane Inspections/Certifications Lifting Plans
Working with Flammable and Combustible Liquids	C, O, M	Fire/Explosion.	Flammable and Combustible Liquid Storage and Handling Program Fire Prevention Program Fire Protection Program Housekeeping Policy and Program Hot Work Permit Program

Table 5.14-1 Construction, Operation, and Maintenance Hazards Analysis¹ (cont'd)

Activity	Exposure Potential	Hazard¹	Control
Hot Work (including Cutting and Welding)	C, O, M	Employee injury and property damage from fire. Exposure to fumes during cutting and welding. Ocular exposure to ultraviolet and infrared radiation during cutting and welding. Compressed gas cylinders. Electric shocks and burns.	Hot Work Permit Program Respiratory Protection Program Industrial Hygiene Monitoring Program Personal Protective Equipment (PPE) Program Housekeeping Policy and Program Compressed Gas Cylinders Safety Electrical Safety Program
Troubleshooting and Maintenance of Plant Systems and General Construction Activities	C, O, M	Employee injury and property damage from contact with hazardous energy sources (electrical, thermal, mechanical, etc.)	Hazardous Energy Control (Lockout/Tagout) Program PPE Program Hard Hats, Safety Shoes and Glasses
Working on Electrical Equipment and Systems	C, O, M	Employee contact with live electricity.	Qualified Electricians/Contractors Electrical Safety Program PPE Program Hazardous Energy Control (Lockout/Tagout) Program
Working with Hazardous Materials and Hazardous Waste	C, O, M	Employee injury due to ingestion, inhalation, dermal contact.	HAZWOPER Training Hazard Communication Program
Concrete/Forms Work	C	Employee injury due to work at height, slips, trips, and falls.	Wear fall protection when working at height, protect exposed rebar, and maintain good housekeeping
Confined Space Entry	C, O, M	Employee injury from physical and chemical hazards.	Permit Required Confined Space Entry Program
General Construction Activities and Operations	C, O, M	Employee injuries from hand and portable power tools. Employee injury and property damage from inadequate walking and work surfaces. Employee overexposure to occupational noise. Employee injury from improper lifting and carrying of materials and equipment.	Hand and Portable Power Tool Safety Program PPE Program Housekeeping Policy and Program Site Inspection Program Hearing Conservation Program PPE Program Safe Lifting Program Provision of Adequate Material Handling Equipment

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Table 5.14-1 Construction, Operation, and Maintenance Hazards Analysis¹ (cont'd)

Activity	Exposure Potential	Hazard ¹	Control
Construction, Testing, Troubleshooting, Maintenance and Repair of High Pressure Steam and Air Systems		Employee injury and property damage from unsafe driving.	Safe Driving Program Restricted Vehicle Access to Construction Site Designated Vehicle Traffic Routes
		Employee overexposure to hazardous gases, vapors, dusts, and fumes.	Hazard Communication Program Respiratory Protection Program PPE Program Industrial Hygiene Exposure Monitoring
		Employee injury and property damage due to failure of pressurized system components or unexpected release of pressure.	Installation of Proper Relief Valving and Institution of a Relief Valve Maintenance and Testing Program Proof Testing of Pressure System Components Hazardous Energy Control (Lockout/Tagout) Program Line Breaking Safety Program

¹ The hazard and hazard controls provided are generic to construction and operational activities. As the design and construction of the facility proceeds, these analyses will be updated to reflect current conditions and knowledge.

Cal-OSHA = California Occupational Safety and Health Administration.

HAZWOPER = Hazardous Waste Operation Emergency Response.

C = Construction Phase, M = Facilities Maintenance, O = Facilities Operation.

Outlines are provided below of the project's Injury and Illness Prevention Plan (IIPP), Fire Protection and Prevention Program, Emergency Action Plan, and Personal Protective Equipment (PPE) Program. IIPP, Fire Protection, Emergency Action, and PPE plans/programs will be developed and implemented during project construction. These plans then will be tailored for project operations and used throughout the Palomar project's operational life.

Injury and Illness Prevention Plan

- Safety And Health Policies
- Personnel With The Responsibility And Authority For Implementing The Plan
- Work Rules And Safe Work Practices
- Systems For Ensuring Employee Compliance With Safe Work Practices
- Hazard Communication
- Identification And Evaluation Of Workplace Hazards

- Employee Communications
- Methods And/Or Procedures For Investigating, Reporting And Correcting Unsafe Or Unhealthy Conditions, Work Practices And Work Procedures In A Timely Manner
- Specific Safety Programs (e.g., Fall Protection, Lockout/Tagout, Respiratory Protection)
- Training And Instruction (Including Documentation)
- Contact Personnel For Information On Plan Contents

Fire Protection and Prevention Program

- General Requirements
- Fire Hazard Inventory, Including Ignition Sources And Mitigation
- Housekeeping
- Employee Alarm/Communication System
- Portable Fire Extinguishers
- Fixed Fire Fighting Equipment
- Fire Control/Emergency Response
- Flammable And Combustible Liquid Storage
- Use Of Flammable And Combustible Liquids
- Dispensing And Disposal Of Flammable And Combustible Liquids
- Training
- Contact Personnel For Information On Plan Contents

Emergency Action Plan

- Emergency Escape Procedures And Emergency Escape Route Assignments
- Procedures For Employees Who Remain to Conduct Critical Plant Operations
- Procedures To Account For All Employees After Emergency Evacuation Has Been Completed
- Rescue And Medical Duties For Designated Employees
- Fire And Emergency Reporting Procedures
- Alarm And Communication System
- Personnel To Contact For Information On The Plan Contents
- Spill Prevention/Control And Countermeasure Plan

Personal Protective Equipment Program

- Hazard Analysis And Prescription Of Personal Protective Equipment
- Personal Protective Devices
- Head Protection – ANSI-Approved Hard Hats Mandatory
- Eye And Face Protection – ANSI-Approved Safety Eyewear Mandatory
- Body Protection
- Hand Protection
- Hearing Protection
- Foot Protection – ANSI-Approved Safety Footwear Mandatory
- Sanitation
- Full Body Harnesses And Life Lines
- Protection Against Electric Shock
- Medical Services And First Aid/Bloodborne Pathogens
- Respiratory Protective Equipment
- Training, Workplace Evaluation

5.14.3.2 Safety Training Programs

Table 5.14-2 summarizes the training programs that will be required for construction and operations personnel.

Table 5.14-2 Construction and Operation Training Program

Training Course	Project Phase	Target Employees
Injury and Illness Prevention Plan	C, O, M	All
Emergency Action Plan	C, O, M	All
PPE Program	C, O, M	All
Heavy Equipment Safety Program		Employees working on, near, or with heavy equipment.
Forklift Operator Training	C, O, M	Employees working on, near, or with forklifts.
Trenching and Excavation Safety Program/Use of Excavation Permits per Cal-OSHA	C, O, M	Employees involved with trenching or excavation.
100% Fall Protection Program	C, O, M	Employees required to use fall protection.

Table 5.14-2 Construction and Operation Training Program (cont'd)

Training Course	Project Phase	Target Employees
Scaffolding Safety Program	C, O, M	Employees required to erect or use scaffolding.
Hoisting and Rigging Safety Program	C, O, M	Employees responsible for the oversight or conduct of hoisting and rigging.
Crane Safety Program	C, O, M	Employees supervising or performing crane operations.
Flammable and Combustible Liquid Storage and Handling	C, O, M	Employees responsible for handling and storage of flammable or combustible liquids or gasses.
Hot Work Permits	C, O, M	Employees performing hot work.
Hazardous Energy Control (Lockout/Tagout)	C, O, M	Employees performing lockout/tagout.
Electrical Safety	C, O, M	Employees who work on electrical systems and equipment.
Permit Required Confined Space Entry	C, O, M	Employees who supervise or perform confined space entry.
Hand and Portable Power Tool Safety	C, O, M	All
Housekeeping Policy and Program	C, O, M	All
Hearing Conservation	C, O, M	All
Safe Lifting Program	C, O, M	All
Safe Driving Program	C, O, M	All
Hazardous Substances Program (Hazard Communication)	C, O, M	All
Pressure Safety	C, O, M	Employees supervising or working on pressurized systems or equipment.
Line Breaking Safety	C, O, M	Employees performing general maintenance or working on pressurized systems or equipment.
Relief Valve Maintenance and Testing	C, O, M	Employees who maintain or test relief valves.
Respiratory Protection Program	C, O, M	All employees are required to wear respiratory protection.
Fire Prevention Program	C, O, M	All
Fire Protection Program	C, O, M	All
HAZWOPER/First Responder	C, O, M	Employees working around hazardous materials/waste.

C = Construction Phase, M = Facilities Maintenance, O = Facilities Operation

Construction Phase Mitigation Measures

WS-1. The Applicant will prepare a Construction Field Safety Plan and a Construction IIPP prior to beginning construction work at the site. The Field Safety Plan will include a job hazard analysis, PPE program, fire suppression and prevention plan, and identification of fire suppression support services to be used.

The Construction IIPP will include the following elements:

- A written Code of Safe Practices that relates to construction operations
- Identification of the responsible persons
- A system for identifying workplace hazards and routine safety inspections.
- Periodic meetings of supervisors or management to discuss safety problems.
- A system ensuring employee and subcontractor compliance.
- Routine "tool box" or "tailgate" meetings.
- Methods of communicating with employees.
- Procedures for promptly correcting unsafe conditions.
- Record keeping procedures.
- Accident Investigation and Reporting.

WS-2. The Applicant will verify that project personnel and contract companies selected to perform work during the construction phase have comprehensive training programs for their employees, and that employees assigned to the Palomar project have received the training necessary to perform their work safely.

Operational Phase Mitigation Measures

WS-2. The Applicant will prepare and implement an Operational Safety Plan and Operational IIPP prior to commencing operations at the site. The Operational Safety Plan will include a Code of Safe Work Practices that all employees will be required to follow. The Safety Plan will also include a job hazard analysis, use of personal protection equipment (PPE), a safety-training program, an Emergency Response Plan, fire suppression and prevention plan, identification of fire suppression support services to be used, and descriptions of fire suppression equipment and detection systems.

An Operational IIPP will be prepared to comply with CCR Title 8, Section 3203. The written IIPP will contain the following information:

- Identity of the responsible person(s)
- Compliance with safe and healthy work practices to include, but not limited to:
 - Facility Lighting per ANSI/IES – RP-7 “American National Standards Practice for Industrial Lighting”
 - Lock-out and Tag-out procedures
 - Confined space entry procedures
 - Hot work procedures
 - Smoking only in designated areas
- A system for facilitating employer-employee communications.
- Procedures for identifying, reporting, and evaluating workplace hazards.
- Methods for correcting unhealthy and unsafe conditions.
- Training programs for new, transferred, or promoted employees.
- Training programs for start-up of new processes and/or new equipment.
- Documentation of inspections and training for a minimum of three years

Note that mitigation measures related to worker safety also are identified in Section 5.12 (Hazardous Materials Handling) and Section 5.13 (Waste Management).

5.14.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to worker safety are anticipated from the proposed project.

5.14.5 Cumulative Impacts

The cumulative analysis includes two small (<50 MW) gas-fired peaking power plants projects near the Palomar site, and the overall ERTC industrial park within which the Palomar site is located. The small power plants are the RAMCO peaker unit 0.5-mile north of the Palomar site, and the CalPeak peaker unit on Enterprise Street adjacent to the northern boundary of the Palomar site. Both of the peaker plants are under construction and will be in operation well before the Palomar project begins construction. Thus, there is no cumulative impact potential associated with construction activities of these various power plant projects.

Worker safety programs will be developed and implemented independently for the Palomar facilities and the two other power plants. Project construction and operation activities at the Palomar project will not cause or contribute to significant cumulative impacts on worker safety.

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The Palomar site is in Planning Area 1 of a total of eight planning areas of the ERTC industrial park. Palomar construction is expected to overlap in time with construction activities in other areas of the industrial park. As with the nearby power plant projects, worker safety programs will be developed and implemented independently for the power plant and industrial park activities. However, to the extent that construction activities for the industrial park and power plant overlap in time and occur near each other, and, for example, employees and equipment/materials deliveries use the same access routes into the overall site, there is the potential for accidents. Construction managers of the power plant and industrial park projects should ensure sufficient coordination among contractors for the respective projects to minimize conflict and potential accidents.

5.14.6 LORS Compliance

Design, construction, and operation of the Palomar project, including its linear facilities, will be conducted in accordance with the LORS pertinent to worker safety. The applicable LORS are discussed in Section 6.3.2.

5.14.7 Involved Agencies and Agency Contacts

Contacts for agencies directly involved with regulatory requirements for Palomar project worker safety are presented in Table 5.14-3.

Table 5.14-3 Involved Agencies and Agency Contacts

Agency/Address	Contact/Telephone	Permits/Reason for Involvement
Cal-OSHA District Office 7575 Metropolitan Drive, Suite 207, San Diego, CA 92108	Lou Collins, Aston Ling (619) 767-2280	Trenching and Excavation Permit Permit-to-Erect Fixed Tower Crane Permit-to-Operate Fixed Tower Crane Erection and dismantling of scaffolds, falsework, or vertical shoring systems Construction Field Safety Plan and Injury and Illness Prevention Plan Operational Field Safety Plan and Injury and Illness Prevention Plan Personal Protection Plan (PPE)
Escondido Fire Department Administrative Headquarters, 201 North Broadway Escondido, CA 92025	Fire Marshal Lamont Landis (760) 839-5414	Construction Fire Protection and Prevention Plan. Operational Fire Protection and Prevention Plan.

5.14.8 Permits Required and Permit Schedule

Permits required and permit schedule for matters dealing with Palomar project worker safety are provided in Table 5.14-4.

Table 5.14-4 Permits Required and Permit Schedule

Permit/Approval Required	Schedule
Trenching and Excavation Permit	60 days prior to start of construction.
Permit-to-Erect Fixed Tower Crane	60 days prior to start of construction
Permit-to-Operate Fixed Tower Crane	60 days prior to start of construction.
Erection and dismantling of scaffolds, falsework, or vertical shoring systems	60 days prior to start of construction.
Construction Field Safety Plan and Injury and Illness Prevention Plan	60 days prior to start of construction.
Construction Fire Protection and Prevention Plan	60 days prior to start of construction.
Operational Field Safety Plan and Injury and Illness Prevention Plan	90 days prior to start of operations.
Personal Protection Plan	90 days prior to start of operations.
Operational Fire Protection and Prevention Plan	90 days prior to start of operations.

5.14.9 References

California Code of Regulations. Title 8. General Industry Safety Orders, Construction Safety Orders, and Electrical Safety Orders.

Code of Federal Regulations. Title 29 Part 1910. Occupational Safety and Health Standards.

Code of Federal Regulations. Title 29 Part 1926. Safety and Health Regulations for Construction.